

**REMARKS**

Entry of this response is proper under 37 CFR §1.116, since there are no new claims, no new claim amendments, or new issues that are raised herein.

Claims 1-7, 20-26, 39-45, 49-57, 62, 63, 68, 69, and 72-81 are all the claims presently pending in the application. Claims 8-19, 27-38, 46-48, 58-61, 64-67, 70, and 71 are canceled without prejudice or disclaimer.

It is noted that the claim amendments, if any, are made only to assure grammatical and idiomatic English and improved form under United States practice, and are not made to distinguish the invention over the prior art or narrow the claims or for any statutory requirements of patentability. Further, Applicant specifically states that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claims 20-26, 39-45, 62, 63, 68, 69 and 74 through 87 stand rejected under 35 USC §112, first paragraph, as allegedly failing to comply with the written description requirement.

Claims 1-2, 5-8, 10-13, 16, 20, 21, 24, 26, 27, 30-32, 35, 38-40, 43, 45-50, 53, and 55-73 stand rejected under 35 U.S.C. §103(a) over Veerasamy, et al. (US Pat. App. Pub. No. 2004/0203855), in view of Ma, et al. (US Pat. App. Pub. No. 2003/0148765). Claims 3-4, 9, 14, 15, 17, 19, 22, 23, 28, 33, 34, 36, 41, 42, and 51-52 stand rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Veerasamy, further in view of Ma, and further yet in view of well known prior art (MPEP 2144.03). Claims 80 and 81 stand rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Veerasamy, further in view of US Patent No. 6,628,642 to Mile'n, et al.

These rejections are respectfully traversed in the following discussion.

**I. THE CLAIMED INVENTION**

As described in, for example, independent claim 1, the claimed invention is directed to a method of collecting information used for adjustments with an information collecting server in a radio communication system connected to at least one mobile radio terminal for performing user communications.

The method includes, in said mobile radio terminal, monitoring a communication status using a traffic channel. The communication status corresponds to whether or not the

mobile radio terminal has an existing communication connection using the traffic channel which satisfies predetermined criteria. The trigger is detected when a change of the communication status has satisfied a predetermined condition of one of the predetermined criteria.

A reception status of a radio signal is acquired and a coordinate position of the mobile radio terminal is acquired. Information is sent to the information collecting server, including the reception status and the coordinate position.

As described beginning at line 10 on page 1 of the Application, for maintenance and optimization of radio communication systems, there is a need to acquire information related to reception status throughout the system service areas. Various conventional methods are known to collect reception status information from user mobile terminals. However, as described in lines 3-6 on page 5, these conventional methods typically fail to appropriately recognize causes of changes in the reception status and phenomena brought about by changes in the reception area.

In contrast, the present invention provides a method wherein user mobile radio terminals are equipped with monitoring capability for a plurality of criterion, thereby providing data for a plurality of different conditions. The information reported by the present invention includes both reception status information and coordinate position of the user mobile radio terminal. As explained at lines 9-11 of page 14, such enhanced capability using these two reported information types permits different types of maps of the service area to be developed, as based upon which criterion trigger has been detected.

## **II. THE WRITTEN DESCRIPTION REJECTION**

The examiner alleges that claims 20-26, 39-45, 62, 63, 68, 69 and 74-87 fail to comply with the written description requirement. Applicant respectfully disagrees, as follows.

Support for the wording in the claims is clearly found in the originally-filed specification, as follows:

- Claim 20, on page 14, at lines 7-20;
- Claim 21, claim wording was substantially in originally-filed claim;
- Claim 22, claim wording was substantially in originally-filed claim;
- Claim 23, claim wording was substantially in originally-filed claim;
- Claim 24, claim wording was substantially in originally-filed claim;
- Claim 25, claim wording was substantially in originally-filed claim;

- Claim 26, claim wording was substantially in originally-filed claim;
- Claim 39, on page 14, at lines 7-20;
- Claim 40, claim wording was substantially in originally-filed claim;
- Claim 41, claim wording was substantially in originally-filed claim;
- Claim 42, claim wording was substantially in originally-filed claim;
- Claim 43, claim wording was substantially in originally-filed claim;
- Claim 44, claim wording was substantially in originally-filed claim;
- Claim 45, claim wording was substantially in originally-filed claim;
- Claim 62, on page 2, at lines 4-6, and on page 9, at lines 19-23;
- Claim 63, on page 9, at lines 11-14;
- Claim 68, on page 2, at lines 4-6, and on page 9, at lines 19-23;
- Claim 69, on page 9, at lines 11-14;
- Claim 72, on page 9, at lines 15-23;
- Claim 73, on page 9, at lines 11-14;
- Claim 74, on page 13, at lines 17-22, and on page 16, at lines 1 - 18;
- Claim 75, on page 3, at lines 22-26;
- Claims 76, 77, 78, and 79, on page 14, at line 7-23, and on page 21, at lines 3-9;
- Claim 79, on page 9, at lines 20-23, on page 10 at lines 2-9, and page 11, at lines 3-6;
- Claim 80, on page 9, at line 15 through line 6 of page 11;
- Claim 81, on page 9, at line 15 through line 6 of page 11;
- Claim 82, on page 9, at lines 19-23;
- Claim 83, on page 14, line 24 through page 15, line 17;
- Claim 84, on page 18 at lines 5-9 and on page 20 and lines 14-18;
- Claim 85, on page 14, line 24 through page 15, line 17;
- Claim 86, lines 1 to 25 on page 17, lines 10-18 on page 18, and line 14 on page 19 through line 9 on page 20;
- Claim 87, on page 14, line 24 through page 15, line 17;
- Claim 88, at lines 3-9 on page 21; and
- Claim 89, at lines 13-16 of page 14.

In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw this rejection.

### **III. THE PRIOR ART REJECTIONS**

The Examiner considers that claims 1, 2, 5-7, 39, 40, 43-45, 49, 50, 53-57, 62, 63, 68-73, and 83 are unpatentable over Veerasamy, further in view of Ma, and further yet in view of AAPA (page 2 at line 13 through page 3 at line 7), that claims 20, 21, 25, and 26 are unpatentable over Veerasamy, further in view of Ma, that claims 3, 4, 22, 23, 41, 42, 51, 52, 74-79, and 84-89 are unpatentable over Veerasamy, further in view of Ma, further yet in view of AAPA, and even further yet in view of “well known prior art” (e.g., Official Notice).

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Applicant respectfully traverses these rejections.

**The Rejection of Claims 1-2, 5-7, 39-40, 43-45, 49-50, 53-57, 62-63, 68-73, and 83**

**The Veerasamy Reference**

To improve service quality for a wireless network, eliminating coverage hole areas is required. In the coverage hole, a mobile station (MS) faces a serious communication loss, such as a call drop and/or a service loss.

Wireless service providers have a need to monitor the coverage hole for improving their service. To monitor the coverage hole, in Veerasamy, the mobile station, which detects the call drop or the service loss, acquires the location and time corresponding to the call drop and reports the service loss to a base station, along with the location and time, once the mobile station resumes service.

Primary reference Veerasamy differs from independent claim 1 by its failure to:

- respond to a plurality of criterion (e.g., criteria);
- acquire reception status of the radio signal upon detection of one of the predetermined criteria; and
- report both coordinate position and reception status.

To overcome these deficiencies of Veerasamy, the Examiner relies upon secondary reference Ma.

**The Ma Reference**

Ma's invention relates to a handoff technique of a wireless network system. In Ma, a base station determines whether the handoff is necessary or not, as based on the signal strength of a pilot signal. Therefore, a mobile station needs to measure the signal strength of the pilot signal and report the same to the base station. If the signal strength of the pilot signal from one base station exceeds a threshold value, then the base station may determine that handoff from a current base station to a new base station (e.g., a neighboring base station) is required (paragraph [0004]).

The Examiner alleges that one having ordinary skill in the art would modify primary reference Veerasamy by secondary reference Ma "... *for the purpose of providing an efficient communication system*", to arrive at the claimed invention described by claim 1.

In response, Applicants submit that primary reference Veerasamy already

incorporates a handoff scheme similar to that described in secondary reference Ma, as described in paragraphs [0032 & 0033]. Therefore, contrary to the Examiner's characterization, there is nothing of merit added to primary reference Veerasamy by secondary reference Ma for "... purpose of providing an efficient communication system", since Veerasamy already has the handoff capability.

In the rejection of record, the examiner points to Figure 4 and lines 1-4 of paragraph 36 in secondary reference Ma. These lines 1-4 of paragraph 36 read: "*Base station periodically requests that mobile stations in the handoff area transmit pilot signal strength messages based on pilot signal strength measured by the mobile stations.*" This description is directed, however, to the handoff of a mobile station between cells, as is well known in the art. This description is not directed to reporting signal strength information to a server collecting information for making service adjustments in the network. No reference currently of record suggests such signal strength reporting, let alone reporting signal strength in combination with current position upon an occurrence of a predefined condition related to service adjustments.

Therefore, Applicants expressly traverse the Examiner's finding of fact that secondary reference Ma somehow overcomes the deficiencies of Veerasamy.

More significant, Applicants respectfully submit that secondary reference Ma fails to provide any of the elements missing from Veerasamy, since:

- Ma's mobile stations are reporting received pilot signal strength to the base stations, not to a server collecting maintenance information;
- the pilot signal strength reports in Ma are used for purpose of determining handoffs, not for purpose of providing maintenance data;
- the pilot signal strength reports are periodically reported and are not resultant from the mobile station detecting a trigger resultant from one of a plurality of predetermined criterion determined as useful information related to making system adjustments.

Therefore, because of the different purpose and function from that required to satisfy the description in independent claim 1, the method of secondary reference Ma is non-analogous. Additionally, Ma is non-analogous to Veersamy since even the USPTO considers these two references to be in different arts, as evidenced that Veersamy is classified under 455/456.1 and 455/450, whereas Ma is classified under 455/438 and 455/453.

More significantly, even if Ma were to be combined with Veerasamy, the combination would still fail to satisfy the plain meaning of the language of the claim of the requirements described in independent claim 1, since such combination would still fail to provide:

- a plurality of criterion (e.g., criteria) providing triggers to report to the server collecting maintenance data (the combination of Veerasamy/Ma would still be directed only to reporting locations for call drops);
- an acquisition of pilot signal strength upon detection of a service drop (Ma measures pilot signal strength periodically, for purpose of handoff, not based upon a drop of service);
- a report to the server, upon resuming connection after detecting a service drop, of both coordinate position and reception status (the combination would report only the coordinate position of the service drop to the server, since Ma's reporting of pilot signal strength only occurs due to handoff activity and would not even get reported to Veerasamy's server, since the handoff would not involve the maintenance server).

Thus, if Ma's reporting of pilot signal strength, as described in lines 1-4 of paragraph 36, the description relied upon by the Examiner in the rejection, the function of primary reference Veerasamy does not change appreciably, since this function is already present in Veerasamy's system, as clearly described in paragraph [0032]. Therefore, secondary reference Ma fails to overcome the deficiencies of primary reference Veerasamy.

Moreover, in order to modify Veerasamy to arrive at the invention described by independent claim 1, one of ordinary skill in the art would clearly require some type of reasonable rationale currently not articulated, since the modification urged by the Examiner in the rejection currently of record requires that the person of skill extract a processing completely unrelated to the purpose of Veerasamy (a processing which is already in Veerasamy itself), modify this unrelated processing so to be directed to reporting to a maintenance server, and then add this modified processing to Veerasamy's method, even though Veerasamy would not benefit from such modification, all to provide a second parameter to be reported to the maintenance server of Veerasamy, even though there is no need for this second parameter in order to achieve or even improve the purpose of Veerasamy.

Applicants believe that, when viewed from the actual engineering realities of Veerasamy and Ma, as recounted above, such modifications necessarily weights heavily for the conclusion that the claimed invention described by independent claim 1 is clearly non-obvious. The unrelated processing from secondary reference Ma to add the second parameter “reception status” to the report of the first parameter “coordinate position” that is reported upon regaining service provides no benefit to Veerasamy, since Veerasamy’s purpose is achieved without this second parameter. Moreover, the combination with Ma would merely add the power reporting that normally occurs with handoff operations, as already present in Veerasamy, as clearly described in paragraphs [0032-0033], a concept different from that of reporting to a maintenance server upon detection of a trigger for such maintenance reporting. Therefore, it is difficult to imagine any reason that independent claim 1 is obvious over Veerasamy.

In the rejection currently of record, the Examiner additionally points to AAPA (e.g., line 13 of page 2 through line 7 of page 3). However, this description of AAPA does not overcome the above-identified deficiencies of Veerasamy, since AAPA does not teach or suggest reporting both location and reception status to a server and because AAPA does not teach or suggest making reports to a maintenance server for a plurality of criterion.

Therefore, Applicants respectfully submit that the combination of Veerasamy, Ma, and AAPA fails to establish a *prima facie* obviousness rejection, since there would be at least one element missing even if these references were to be combined as urged in the rejection of record. None of the other references currently of record overcome this deficiency for the independent claims. Indeed, no reference currently of record suggests transmitting both reception status and coordinate position to a maintenance server and no reference currently of record suggests using a plurality of criterion for reporting purposes to a maintenance server.

That is, although primary reference Veerasamy arguably provides a delayed message of coordinate position in the event that a call is dropped, there is no suggestion in any of these references to additionally provide reception status as a report to a collecting server for purpose of collecting information used for adjustments in the system, such as adjusting transmission output power or tilt angles of antennas at radio base stations (e.g., lines 18-22 of page 15).

Hence, turning to the clear language of the claims, in Veerasamy, even if combined

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with Ma and AAPA, there would be no teaching or suggestion of: "... in said mobile radio terminal, monitoring a communication status of a communication connection using a traffic channel, wherein said communication status corresponds to whether or not the mobile radio terminal has an existing communication connection using the traffic channel which satisfies predetermined criteria related to one or more of said adjustments; detecting as a trigger when a change of said communication status has satisfied a predetermined condition of one of said predetermined criteria, said predetermined condition being predefined as useful information related to at least one adjustment within a service area of said radio communication system; acquiring a reception status of a radio signal; acquiring a coordinate position of said mobile radio terminal; and sending information including said reception status and said coordinate position to said information collecting server", as required by independent claim 1. The remaining independent claims have similar language.

Therefore, there is at least one element that is missing even if all of these references are combined, so that claims 1, 2, 5-7, 39, 40, 43-44, 49, 50, 53-57, 62, 63, 68-73, and 83 are clearly patentable over Veerasamy.

Moreover, Applicants submit the following additional comments to the rejections of specific claims, as follows.

Relative to claim 5, 43, and 53, there is no suggestion to report when a call is made. The Examiner relies upon discussion of handover, but handover is a different concept from making a call.

Relative to claim 6, 44, and 54, Applicants can find no indication in paragraphs 55 to 58 of Veerasamy or in figures 1 through four of Ma suggesting the display of value information on the mobile terminal.

Relative to claims 56, 62, there is no suggestion in paragraph 24 and 33 of Veerasamy of acquiring received signal quality or receive signal intensity of a common channel for purpose of reporting reception status upon occurrence of a predefined condition.

Concerning the rejection for claims 20, 21, 25 and 26, Applicants' response is similar to that for claim 1 above.

**The Invocation of Official Notice for Claims 3, 4, 22, 23, 41, 42, 51, 52, 74-79, and 84-89**

The Examiner invokes Official Notice for the rejection of claims 3, 4, 22, 23, 41, 42,



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51, 52, 74-79, and 84-89. Applicants respectfully request that the Examiner provide a reasonably combinable reference for these invocations of official notice, since Applicants respectfully challenge the Examiner's positions of record, as follows.

For claim 3, the mere awareness in the art of the existence of handover failure is different from satisfying this claim language in which handover failures are specifically identified to be reported to a maintenance server for purpose of generating a maintenance map based on handover failure. Primary reference Veerasamy is the only reference of record making reports to a maintenance server, and Veerasamy's criterion for reporting is to report location and time of service loss, once the service is restored. There is no suggestion in Veerasamy to make a maintenance report specifically for handover failure.

Similarly, for claim 4, the Examiner is requested to provide a reference that demonstrates that lowering of throughput was known in the art as significant for a maintenance condition in a cellular telephone network, including the known desirability in the art to make reports to a maintenance server upon detecting a threshold of lowered throughput.

Relative to claim 74, the location at which a call drop occurred in primary reference Veersamy is not reported immediately. It is reported upon regaining service. There is no reference currently of record that makes an immediate report to a maintenance server, upon a trigger event related to collecting maintenance data in a cellular network. In contrast, the present invention has a number of predetermined criteria for which an immediate report is executed.

Relative to claim 76, 77, 78, and 79, there is no reference currently of record that suggests a plurality of conditions for triggers. The only evidence currently of record is the method described in primary reference Veersamy, in which the only report condition to a maintenance server is the call drop, as reported upon returning to service. Primary reference Veersamy does not suggest reporting the two measurements required by the independent claims (e.g., reception status and coordinate position) and does not suggest providing a report for any other service-related problems. The benefit of having a plurality of reporting criteria is that more than one service-related map can be derived from the data, thereby permitting additional adjustments to be made for even better service capability.

Relative to claim 84, there is no reference currently of record that suggests using

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mobile terminals of only consenting users for automatically making service-related reports, as based on predetermined criteria. At best, primary reference Veerasamy is silent about this aspect of the claimed invention, but Applicants note that Veerasamy seems to suggest that all user terminals capable of making the dropped call report to the maintenance server would automatically make such reports upon entry back into service.

Relative to claim 85, there is no reference currently of record that suggests transmitting valuable points as consideration to users, including displays on the user terminals and possibly even transmission of the information to a bank server, for automatic electronic deposits into the user's bank account.

Relative to claim 86, there is no reference currently of record that suggests transmitting a trigger by a server to simultaneously start measuring information at user terminals and transmit those measurements to the server. This feature permits the accumulation of data at specific times, as designated by the maintenance server, including normal operation data, without having to dedicate bandwidth for continuous data reporting.

In response to the Examiner's invocation of "official notice" for these claims, Applicants respectfully submit that the mere awareness in the art of various element components does not justify that the element is obvious in the context of the claimed invention. As Judge Newman wrote in her dissent in the January 31, 2011, holding of *Tokai v. Easton* (emphasis by Applicants):

*"The district court applied an incorrect standard. The determination of obviousness is not whether a person could, with full knowledge of the patented device, reproduce it from prior art or known principles. The question is whether it would have been obvious, without knowledge of the patentee's achievement, to produce the same thing that the patentee produced. This judgment must be made without the benefit of hindsight. It is improper to take concepts from other devices and change them in light of the now-known template of the patented device, without some direction in the prior art that would render it obvious to do so."*

Applicants respectfully submit that the prior art evaluations currently of record improperly attempt to extract concepts out-of-context from the art and modify these concepts to arrive at the claimed invention without any direction in the prior art that would render such changes obvious.

Applicants also submit that the USPTO's recent update to its *KSR* Guidelines seemingly clearly requires more rationalization by the Examiner for these claims and for all

of the rejections based on Veerasamy/Ma, since the update states (emphasis by Applicants):

*“In view of the cases decided since KSR, one situation when it is important to identify a reason to combine known elements in a known manner to obtain predictable results is when the combination requires a greater expenditure of time, effort, or resources than the prior art teachings. Even though the components are known, the combining step is technically feasible, and the result is predictable, the claimed invention may nevertheless be nonobvious when the combining step involves such additional effort that no one of ordinary skill would have undertaken it without a recognized reason to do so. When a combination invention involves additional complexity as compared with the prior art, the invention may be nonobvious unless an examiner can articulate a reason for including the added features or steps. This is so even when the claimed invention could have been readily implemented.”*

More specifically, extracting the power-level reporting process in Ma related to handoffs clearly would require extensive modification before it could be adapted as the mechanism for adding a second reporting parameter to a maintenance server, particularly since such second parameter is not beneficial to Veerasamy’s maintenance reporting. Adding the “official notice” modifications only further necessitates that the Examiner provide some type of reasonable rationale to be expending so much additional effort to modify the system of Veerasamy, which already functions perfectly.

#### **The Rejection for Claims 80-82, based on Veerasamy/Mile’n**

The Examiner alleges that claims 80 and 81 are rendered obvious by the combination of Veerasamy and Mile’n and that claim 82 is additionally rendered obvious further in view of Official Notice.

#### **The Mile’n Reference**

As explained in the Abstract, Mile’n is directed toward monitoring synchronization deviation in a mobile telecommunication system. The deviation in the synchronization between base stations is computed from measurements made at handover of a mobile station between base stations. When the deviation exceeds a predetermined threshold, an alarm is triggered, which provides an alert to adjust the synchronization of the system.

As explained in lines 30-36 of column 1, such synchronization loss can occur because of lack of synchronization between reference timing sources for the two base stations, further explained at lines 6-12 of column 2 as resulting from unreliable sources that cause frequency drift or from such reasons as unsynchronized clocks, faulty configuration of intermediate network modules, as well as BTS faults and link breaks. As explained in lines 20-27 of

column 6, the user's mobile station 220 contributes in the method of Mile'n by measuring and reporting to the base stations upon completion of a handover the time difference between timings of the two base stations involved. As further described beginning at line 56 of column 5, the system then calculates and maintains for each pair of base stations a value for parameter  $k$ , as derived from these reports from user mobile stations, so that upon the system detecting that a threshold has been exceeded, an alarm will prompt the system operator to intervene and make clock adjustments at the affected base station.

Applicants respectfully submit that secondary reference Mile'n is non-analogous to primary reference Veerasamy, since the mechanism in Mile'n makes routine reports of timing differences to the two base stations after a handoff has occurred. This concept is different from having the user mobile station detect a trigger condition upon which trigger condition the user mobile station then acquires the current reception status and current coordinate position and reports the reception status/coordinate position to a maintenance server. That is, the purpose and function in Mile'n is different from both that of primary reference Veerasamy and that of the claimed invention, so Mile'n is also non-analogous and not properly combinable with Veerasamy.

Therefore, secondary reference Mile'n adds little additional merit to the evaluation of independent claim 1 or to the evaluation of primary reference Veerasamy. Moreover, the Examiner's reliance of Mile'n in the evaluation of independent claims 80 and 81 is not clear, since the user terminal in Mile'n reports differences in timing between the two base stations, contrary to the Examiner's characterization. That is, lines 51-67 of column 1 of Mile'n actually relates to timing, *not* to reporting reception quality and intensity, as alleged by the Examiner on page 19 of the latest Office Action.

Therefore, Applicants submit that claims 80 and 81 are also clearly patentable over Veerasamy.

Relative to the rejection for claim 82, Applicants respectfully request that the Examiner provide a reasonably combinable reference that demonstrates that reception quality and intensity of a common pilot channel was known in the art as significant for reporting to a maintenance server upon condition that a trigger has been detected by a user mobile terminal in a mobile system.

Therefore, Applicants submit that claim 82 is also patentable over Veerasamy, even if

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modified by Mile'n.

In view of the foregoing, Applicant submits that there is at least one element that is not demonstrated in Veerasamy or any other reference currently of record, and the Examiner is respectfully requested to reconsider and withdraw all rejections based on Veerasamy in view of Ma or Mile'n.

## **CONCLUSION**

In view of the foregoing, Applicant submits that claims 1-7, 20-26, 39-45, 49-57, 62, 63, 68, 69, and 72-84, all the claims presently pending in the application, are patentably distinct over the prior art of record and are allowable, and that the application is in condition for allowance. Such action would be appreciated.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned attorney at the local telephone number listed below to discuss any other changes deemed necessary for allowance in a telephonic or personal interview.

To the extent necessary, Applicant petitions for an extension of time under 37 CFR §1.136. The Commissioner is authorized to charge any deficiency in fees, including extension of time fees, or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,



Date: May 6, 2011

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